

What is claimed is:

1. A nucleic acid vector comprising a pair of bovine adeno-associated virus (BAAV) inverted terminal repeats and a promoter between the inverted terminal repeats.
2. The vector of claim 1, wherein the promoter is an adeno-associated virus (AAV) promoter p5.
3. The vector of claim 1, wherein the p5 promoter is BAAV p5 promoter.
4. The vector of claim 1, further comprising an exogenous nucleic acid functionally linked to the promoter.
5. A recombinant viral particle comprising the vector of claim 1, wherein the vector is encapsidated in parvovirus particle.
6. The particle of claim 5, wherein the particle is a recombinant BAAV particle.
7. The particle of claim 5, wherein the particle is an AAV1 particle, an AAV2 particle, an AAV3 particle, an AAV4 particle, an AAV5, an AAV6, an AAV7, an AAV8 or an avian adeno-associated virus (AAAV) particle.
8. The particle of claim 5, wherein the particle is a dependent parvovirus (dependovirus) particle.
9. The particle of claim 5, wherein the particle is an AAV particle.
10. A recombinant BAAV virion containing a vector comprising a pair of AAV1, AAV2, AAV3, AAV4, AAV5, AAV6, AAV7, AAV8, AAAV or BAAV inverted terminal repeats.

11. The virion of claim 11, wherein the vector further comprises an exogenous nucleic acid inserted between the inverted terminal repeats.
12. An isolated nucleic acid comprising the nucleotide sequence set forth in SEQ ID NO:1.
13. An isolated nucleic acid consisting essentially of the nucleotide sequence set forth in SEQ ID NO:1.
14. An isolated nucleic acid that selectively hybridizes with the nucleic acid of claim 13.
15. An isolated nucleic acid encoding a BAAV Rep protein.
16. The nucleic acid of claim 15, wherein the BAAV Rep protein has the nucleic acid sequence set forth in SEQ ID NO:2.
17. The nucleic acid of claim 15, wherein the BAAV Rep protein has the amino acid sequence set forth in SEQ ID NO:3.
18. The nucleic acid of claim 15, wherein the BAAV Rep protein has the amino acid sequence set forth in SEQ ID NO:5.
19. The nucleic acid of claim 15, wherein the BAAV Rep protein has the nucleic acid sequence set forth in SEQ ID NO:4.
20. An isolated BAAV Rep protein.
21. The isolated BAAV Rep protein of claim 20, having the amino acid sequence set forth in SEQ ID NO:3, or a unique fragment thereof.
22. The isolated BAAV Rep protein of claim 20, wherein the protein is encoded by the nucleic acid sequence set forth in SEQ ID NO:2, or a unique fragment thereof.

23. The isolated BAAV Rep protein of claim 20, wherein the protein is encoded by the nucleic acid sequence set forth in SEQ ID NO:4, or a unique fragment thereof.
24. The isolated BAAV Rep protein of claim 20, having the amino acid sequence set forth in SEQ ID NO:5, or a unique fragment thereof.
25. An isolated antibody that specifically binds the protein of claim 21.
26. An isolated BAAV capsid protein.
27. The isolated BAAV capsid protein of claim 26 having the amino acid sequence set forth in SEQ ID NO:9.
28. An isolated antibody that specifically binds the protein of claim 27.
29. The isolated BAAV capsid protein of claim 26, having the amino acid sequence set forth in SEQ ID NO:7.
30. An isolated antibody that specifically binds the protein of claim 29.
31. The isolated BAAV capsid protein of claim 26, having the amino acid sequence set forth in SEQ ID NO:11.
32. An isolated antibody that specifically binds the protein of claim 31.
33. An isolated nucleic acid encoding the protein of claim 26.
34. The nucleic acid of claim 33, having the nucleic acid sequence set forth in SEQ ID NO:6.
35. The nucleic acid of claim 33, having the nucleic acid sequence set forth in SEQ ID NO:8.
36. The nucleic acid of claim 33, having the nucleic acid sequence set forth in SEQ ID NO:10.

37. An isolated nucleic acid that selectively hybridizes with the nucleic acid of claim 33.
38. A BAAV particle comprising a capsid protein consisting essentially of the amino acid sequence set forth in SEQ ID NO:7.
39. A BAAV particle comprising a capsid protein consisting essentially of the amino acid sequence set forth in SEQ ID NO:9.
40. A BAAV particle comprising a capsid protein consisting essentially of the amino acid sequence set forth in SEQ ID NO:11.
41. An isolated nucleic acid comprising a BAAV p5 promoter.
42. The nucleic acid of claim 41, wherein the p5 promoter has the nucleic acid sequence of SEQ ID NO:15.
43. An isolated nucleic acid comprising a BAAV p19 promoter.
44. The nucleic acid of claim 41, wherein the p19 promoter has the nucleic acid sequence of SEQ ID NO:16.
45. An isolated nucleic acid comprising a BAAV p40 promoter.
46. The nucleic acid of claim 41, wherein the p40 promoter has the nucleic acid sequence of SEQ ID NO:17.
47. A method of screening a cell for infectivity by BAAV, comprising contacting the cell with BAAV and detecting the presence of BAAV in the cells.
48. A method of determining the suitability of a BAAV vector for administration to a subject, comprising contacting an antibody-containing sample from the subject with an antigenic fragment of a protein of claim 26 and detecting an antibody-antigen reaction in the sample, the presence of a neutralizing reaction indicating the BAAV vector to be unsuitable for use in the subject.
49. A method of determining the presence in a subject of a BAAV-specific antibody comprising, contacting an antibody-containing sample from the subject with an antigenic fragment of the protein of claim 26 and detecting an antibody-antigen reaction in the sample, the presence of a reaction indicating the presence of a BAAV-specific antibody in the subject.
50. A method of delivering an exogenous nucleic acid to a cell, comprising

administering to the cell a BAAV particle containing a vector comprising the nucleic acid inserted between a pair of AAV inverted terminal repeats, thereby delivering the nucleic acid to the cell.

51. The method of claim 50, wherein the AAV inverted terminal repeats are BAAV inverted terminal repeats.
52. A method of delivering a nucleic acid to a subject comprising administering to a cell from the subject a BAAV particle comprising the nucleic acid inserted between a pair of AAV inverted terminal repeats, and returning the cell to the subject, thereby delivering the nucleic acid to the subject.
53. A method of delivering a nucleic acid to a cell in a subject comprising administering to the subject a BAAV particle comprising the nucleic acid inserted between a pair of AAV inverted terminal repeats, thereby delivering the nucleic acid to a cell in the subject.
54. A method of delivering a nucleic acid to a cell in a subject having antibodies to AAV2 comprising administering to the subject a BAAV particle comprising the nucleic acid, thereby delivering the nucleic acid to a cell in the subject.
55. The method of any of claims 50-54, wherein the cell is an inner ear neuro-epithelial cell.
56. The method of claim 55, wherein the cell is an inner ear hair cell.
57. The method of claim 55, wherein the cell is an inner hair cell or outer hair cell of the organ of Corti.
58. The method of claim 55, wherein the cell is a vestibular hair cell.
59. The method of claim 55, wherein the cell can be an inner ear supporting cell such as Hensen's, phalangeal, interdental, or vestibular supporting cells.
60. The method of any of claims 52 to 54, wherein the cell is an airway epithelial cell.
61. The method of any of claims 60, wherein the cell is a columnar, goblet, or basal cell.
62. The method of any of claims 52 to 54, wherein the cell is a cell of the submandibular gland.
63. The method of any of claims 62, wherein the cell is a ductal or acinar cell.
64. An isolated nucleic acid comprising the nucleotide sequence set forth in SEQ ID NO:12.

65. An isolated nucleic acid consisting essentially of the nucleotide sequence set forth in SEQ ID NO: 12.
66. A vector system for producing infectious virus particles having a characteristic of BAAV comprising: at least one vector comprising a nucleic acid selected from the group consisting of a pair of BAAV inverted terminal repeats, a nucleic acid encoding a BAAV capsid protein, and a nucleic acid encoding a BAAV Rep protein.
67. The vector system of claim 66, comprising two vectors.
68. The vector system of claim 67, wherein the first vector comprises a nucleic acid encoding a BAAV Rep protein and the second vector comprises a pair of BAAV inverted terminal repeats.
69. The vector system of claim 67, wherein the first vector comprises a nucleic acid encoding a BAAV capsid protein and a nucleic acid encoding a BAAV Rep protein and the second vector comprises a pair of BAAV inverted terminal repeats.
70. The vector system of claim 67, wherein the first vector comprises a nucleic acid encoding a BAAV capsid protein and the second vector comprises a pair of AAV inverted terminal repeats.
71. The vector system of claim 70, wherein the second vector comprises a pair of AAV1 inverted terminal repeats.
72. The vector system of claim 70, wherein the second vector comprises a pair of AAV2 inverted terminal repeats.
73. The vector system of claim 70, wherein the second vector comprises a pair of AAV3 inverted terminal repeats.
74. The vector system of claim 70, wherein the second vector comprises a pair of AAV4 inverted terminal repeats.
75. The vector system of claim 70, wherein the second vector comprises a pair of AAV5 inverted terminal repeats.
76. The vector system of claim 70, wherein the second vector comprises a pair of AAV6 inverted terminal repeats.

77. The vector system of claim 70, wherein the second vector comprises a pair of AAV7 inverted terminal repeats.
78. The vector system of claim 70, wherein the second vector comprises a pair of AAV8 inverted terminal repeats.
79. The vector system of claim 70, wherein the second vector comprises a pair of AAV inverted terminal repeats.
80. The vector system of claim 70, wherein the second vector comprises a pair of BAAV inverted terminal repeats.
81. The vector system of claim 70, wherein the first vector further comprises a nucleic acid encoding an AAV1 Rep protein.
82. The vector system of claim 70, wherein the first vector further comprises a nucleic acid encoding an AAV2 Rep protein.
83. The vector system of claim 70, wherein the first vector further comprises a nucleic acid encoding an AAV3 Rep protein.
84. The vector system of claim 70, wherein the first vector further comprises a nucleic acid encoding an AAV4 Rep protein.
85. The vector system of claim 70, wherein the first vector further comprises a nucleic acid encoding an AAV5 Rep protein.
86. The vector system of claim 70, wherein the first vector further comprises a nucleic acid encoding an AAV6 Rep protein.
87. The vector system of claim 70, wherein the first vector further comprises a nucleic acid encoding an AAV7 Rep protein.
88. The vector system of claim 70, wherein the first vector further comprises a nucleic acid encoding an AAV8 Rep protein.
89. The vector system of claim 70, wherein the first vector further comprises a nucleic acid encoding an AAV Rep protein.
90. The vector system of claim 70, wherein the first vector further comprises a nucleic acid encoding a BAAV Rep protein.

91. The vector system of claim 67, wherein the first vector comprises a nucleic acid encoding an AAV capsid protein and the second vector comprises a pair of BAAV inverted terminal repeats.
92. The vector system of claim 91, wherein the first vector comprises a nucleic acid encoding an AAV1 capsid protein.
93. The vector system of claim 91, wherein the first vector comprises a nucleic acid encoding an AAV2 capsid protein.
94. The vector system of claim 91, wherein the first vector comprises a nucleic acid encoding an AAV3 capsid protein.
95. The vector system of claim 91, wherein the first vector comprises a nucleic acid encoding an AAV4 capsid protein.
96. The vector system of claim 91, wherein the first vector comprises a nucleic acid encoding an AAV5 capsid protein.
97. The vector system of claim 91, wherein the first vector comprises a nucleic acid encoding an AAV6 capsid protein.
98. The vector system of claim 91, wherein the first vector comprises a nucleic acid encoding an AAV7 capsid protein.
99. The vector system of claim 91, wherein the first vector comprises a nucleic acid encoding an AAV8 capsid protein.
100. The vector system of claim 91, wherein the first vector comprises a nucleic acid encoding an AAV capsid protein.
- ~~101.~~ ~~The vector system of claim 91, wherein the first vector comprises a nucleic acid encoding a BAAV capsid protein.~~
102. The vector system of any of claims 91 to 101, wherein the first vector further comprises a nucleic acid encoding a BAAV Rep protein.
103. The vector system of any of claims 91 to 101, wherein the second vector further comprises a promoter between the inverted terminal repeats.



104. The vector system of claim 103, wherein the promoter is functionally linked to an exogenous nucleic acid.
105. The vector system of any of claims 66 to 103, wherein a vector of the vector system is encapsidated in an AAV particle.
106. The vector system of claim 105, wherein the vector is encapsidated in a dependent parvovirus particle.
107. The vector system of claim 106, wherein the parvovirus particle which encapsidates the vector is an AAV1 particle, an AAV2 particle, an AAV3 particle, an AAV4 particle, an AAV5 particle, an AAV6 particle, an AAV7 particle, an AAV8 particle, an AAV particle or a BAAV particle.
108. A vector comprising a pair of AAV inverted terminal repeats, a nucleic acid encoding a BAAV capsid protein and a nucleic acid encoding an AAV Rep protein.